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Post Traumatic Stress Symptoms and Critical Incident Stress Debriefing (CISD) in Emergency Medical Services (EMS) Personnel.

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ABSTRACT

Post Traumatic Stress Symptoms and Critical Incident Stress Debriefing (CISD) in Emergency Medical Services (EMS) Personnel

by

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EMS personnel were examined for Post Traumatic Stress symptoms and the usefulness of Critical Incident Stress Debriefing (CISD) using the Los Angeles Symptom Checklist (LASC) and a demographics questionnaire. This study revealed that women in this group show higher PTSD symptoms than male coworkers. Level of Training (LOT) of the EMS provider did not demonstrate a significant difference in whether a provider developed PTSD. EMS personnel receiving debriefing actually suffered greater levels of PTSD than those who did not receive debriefing. And 16% of EMS providers in this study suffered from PTSD, while approximately 20% suffered from partial PTSD or PTSS. The results suggest that there are high levels of PTSD within the EMS community, especially in women. This study also suggests that CISD does not help with PTSD symptoms and may actually worsen them.

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CHAPTER 1

INTRODUCTION

Over 30 years ago, a young Maryland paramedic worked on the scene of an automobile accident involving a young couple married only a few hours prior to the accident. The groom was the driver of the vehicle and obviously intoxicated; he survived. The young bride died when an object came through the windshield and became impaled in her body. The paramedic had seen many horrendous accidents, but the sight of the young victim in her bloodied, white wedding gown affected him greatly. The Emergency Medical Service (EMS) provider had great difficulty forgetting this particular incident; he could not go past a bridal shop or see a wedding dress without crying. This particular paramedic was Jeffrey Mitchell, PhD., who later founded the International Critical Incident Stress Foundation (ICISF). The goal of ICISF is to quickly address and help reduce symptoms that may occur after experiencing or witnessing a traumatic event. Mitchell saw a great need in himself and his colleagues for some type of debriefing or counseling after traumatic events (Mitchell, Everly, & Mitchell, 1999).

Over 30 years ago the need for stress management techniques within the EMS population was recognized. Today, the need for Critical Incident Stress Management (CISM) has grown with the increasing stress and responsibilities of EMS providers. CISM has also expanded from its roots in EMS to being frequently used in many schools, industries, and organizations. “CISM is a comprehensive, integrative, multi-component crisis intervention system. CISM is not psychotherapy, nor a substitute for psychotherapy; CISM is a form of psychological first aid” (Mitchell et al., 1999, p. 149 & 151).

There are seven major components of CISM. The first component of CISM is pre-crisis preparation, which involves stress management education and crisis mitigation training for individuals and organizations. The second component involves post-crisis disaster services

involving school and community support programs. The third component of CISM is defusing, a 3-phase, structured, small group discussion that occurs within 12 hours of a crisis. The purpose of defusing is assessment, triage, and acute symptom mitigation. The fourth component is Critical Incident Stress Debriefing (CISD), a multiphase, structured group discussion performed 1 to 10 days post crisis. The purpose of CISD is to mitigate acute symptoms, assess the need for follow-up treatment, and, if possible, provide a sense of post-crisis psychological closure. The fifth component of CISM is one-on-one crisis intervention/counseling throughout the crisis. Step six is family crisis intervention and organizational consultation. The final component of CISM is follow-up treatment and referrals.

Common responses to stress in emergency workers are increased absenteeism and sick leave, decreased job satisfaction, the formulation of antagonistic work factions, and mistakes in job performance (Mitchell & Dyregrov, 1993). “Crying spells, intensifying depression, sleeplessness, sudden mood swings, angry outbursts, frustration with small tasks, a sense of helplessness, feelings of hopelessness, and other signs of emotional distress may develop after emergency service responders engage rescue operations” (p. 147). These issues are old problems, but since the terrorist attack against the United States on September 11, 2001 (9/11), more EMS workers in New York are taking leaves of absence, quitting their jobs, being reprimanded for unprofessional behaviors, and committing suicide (Dionne, 2002). Despite the high rate of psychological problems EMS workers face, many EMS agencies appear to be lacking trained mental health personnel for staff. If mental health care is available, it is often unknown to the EMS workers.

The tragedy on 9/11 has created awareness of the importance of mental health issues for EMS providers and to the amounts of stress the EMS provider faces while on duty. The purpose of this study is to explore a sample of EMS providers as to the presence of Post Traumatic Stress

Disorder (PTSD) symptoms, gender and training of the EMS provider, the location in which the provider works (rural area in this study), and the effectiveness of CISM/CISD on reducing these symptoms. This study explores the current stress management strategies and their effectiveness in the EMS sample surveyed.

Theoretical Background

Work-Roles and PTSD

The Diagnostic and Statistical Manual for Mental Disorders-IV-Text Revision (DSM-IV-TR) describes Post Traumatic Stress Disorder as "the development of characteristic symptoms following exposure to an extreme traumatic stressor (American Psychiatric Association, 2000, p.463)." PTSD symptoms may develop from threat of death or injury to self and or others, or witnessing events involving death or injury. PTSD symptoms are expected to be high in EMS personnel because of the threat to personal safety and the safety of fellow employees in their daily work, as well as witnessing the suffering of others.

EMS personnel must cope with witnessing frequent traumatic events experienced by strangers. EMS personnel often develop strong bonds with the patients they are caring for, especially in instances where there are prolonged times on scene with patients (e.g. extrication from mangled vehicles or other forms of victim entrapment). When these patients die or experience severe injuries, the responder often takes it hard and personally. "When a victim expires, there is a deep sense of failure and loss on the part of the emergency service workers; they blame themselves for the failure" (Mitchell et al., 1999, p. 145). The responder often experiences extreme anger, anxiety, sympathy, survivor guilt, discomfort, fear, delayed stress reactions, and other extreme emotions.

Emergency work is filled with unanticipated and novel situations and involves disturbed rest periods, long working hours (often 24 hour shifts), and limitations in staffing levels

(Mitchell et al, 1993). These factors contribute to levels of work stress. In the United States, outside of large cities, most EMS personnel render their services in small community volunteer fire and rescue departments. An unanticipated call may occur in which and a responder must care for personal friends and family; this frequently occurs in more rural areas (Mitchell et al., 1999). It is difficult enough to care for dead or injured strangers, but being able to completely personalize the event is obviously more traumatizing for firefighters and paramedics.

Gender and PTSD

Gender of the EMS provider may also play a role in the extent to which PTSD symptoms are seen. "Certain individual characteristics have been associated with psychiatric symptoms, particularly the female gender (Smith & North, 1993)."According to the National Comorbidity Survey (NCS) prevalence estimates of PTSD indicate that women are one and a half to two times more likely than men to meet lifetime criteria for PTSD (Pigott, 2003). Women EMS providers experience situations involving assault and trauma of all types more than other women and men in the general population. Therefore, it is expected that women EMS providers will show higher levels of PTSD symptoms than their male counterparts. No data regarding gender in EMS has been found that supports or denies this theory.

Intelligence, Training, and PTSD

"The rescuer's age, experience, status in the group (position or training), and success or failure of activity in a specific mission can be crucial in lowering or intensifying stress reactions" (Mitchell et al., 1999, p.144). Different levels of training within the EMS system may be a factor in the levels of PTSD symptoms that will appear in an individual possibly because the higher trained rescuer is providing the majority of care to the patient. One study suggests that higher intelligence and more education can make soldiers less susceptible to PTSD symptoms (Vasterling, 2002). A second study has also shown a relationship between IQ scores in Vietnam

veterans and PTSD. This study showed that the lower an individual's IQ, the more severe were the PTSD symptoms (McNally & Shin, 1995). These findings with soldiers may generalize to the EMS population in regards to their education and training. It is expected that the more education and training and individual EMS provider has, the less severe the PTSD symptoms will be.

Critical Incident Stress Debriefing (CISD)

There have been contradictory findings in research regarding the effectiveness of Critical Incident Stress Debriefing (CISD). A great deal of the negative research findings has looked at CISD as a single process, without the entire CISM process being used. CISD has been shown ineffective in treatment of PTSD symptoms when used alone. CISM was developed to be employed as a step-by-step process, not as a single debriefing session. "The specific group crisis intervention process called CISM is not a stand alone process. It should never be provided outside the context of a comprehensive, systematic, and multi-tactic CISM program. CISM should always be followed by other services, such as individual support" (Mitchell, 2002, p.57). The CISD portion of the CISM process is designed to mitigate acute symptoms; CISD also acts to provide a sense of closure to the event and to assess the need for follow-up interventions. The International Critical Incident Stress Foundation has shown CISD to be an effective tool for stress management when used within the appropriate 7-step process previously described.

CISD has also been shown effective in the civilian population but only when used appropriately. One study involving 77 victims of crime recruited from the National Trauma Clinic demonstrated significantly fewer PTSD symptoms when CISD was used immediately after a traumatic event and when used in the appropriate process (Campfield & Hills, 2001). It is expected that CISD is an effective peer-support tool when used appropriately within the entire CISM process. It is also expected that many EMS providers never receive these much-needed services when an incident arises, or when CISD is used, it is used inappropriately.

Much of the research regarding stress within EMS and CISD has been done since the terrorist attacks on 9/11/01. The terrorist attacks against the United States on 9/11 involved thousands of EMS personnel. While working to save others on this date, many EMS employees lost their own lives, or the lives of co-workers and fellow professionals were lost. EMS crews worked long hours, even days, to help countless victims trapped within the fallen buildings. Many of the workers have since complained that there was no formal CISM or counseling offered to them during this time. There was also a lack of social and departmental support that these individuals said was needed most (Dionne, 2002).

Research

Stress Reactions in Emergency Workers

Stress is great within EMS; rescue personnel must be able to make life and death decisions within seconds for the patients they care for, while often being concerned with their own safety. Emergency personnel can be affected physically, cognitively, behaviorally, and emotionally by the traumatic events they encounter. If the distress of the EMS provider is strong enough, it may result in death. “Statistics indicate that the leading cause of ‘line of duty’ death for firefighters is heart attack, secondary to stress” (Mitchell et al., 1999, p.146-7).

Burnout and high levels of job stress is a major concern and has been especially evident among the health care professions. Burnout “describes a syndrome of emotional exhaustion and cynicism toward one’s work resulting from chronic organizational stressors” (Grigsby & McKnew, 1988, p.55). Some of the negative effects commonly associated with burnout are high job turnover rates, job dissatisfaction, increased absenteeism, and poor job performance. Paramedics deal with medical emergencies daily and often do so in hazardous and dangerous situations leading to high stress levels and potential burnout.

Grigsby and McKnew (1988) surveyed 213 paramedics to determine if work related stress and burnout could contribute to the high levels of stress and high job dissatisfaction reported by this group. A three-page questionnaire, cover letter, and a stamped envelope were mailed to 594 certified paramedics in all counties of the state of South Carolina. The main measure in this study was the "Jones" Staff Burnout Scale for Health Professionals," a 20-item Likert-type scale assessing symptoms of burnout. The Staff Burnout Scale was also coupled with a 10-item lie scale, which is designed to detect socially desirable answers. Previous research has shown this measure to be highly reliable with significant face validity for health care professionals. Two hundred thirteen (35.6%) completed questionnaires were returned and used in the study.

Results revealed "the highest mean burnout score yet reported for any group of health professionals" (p.55). Of 23 possible correlates of the measure, 18 were associated with burnout among the paramedics in this study. Overall, this research reveals alarmingly high levels of work stress and burnout among paramedics. Most of the burnout reported by this sample can be explained by the following factors: chronic exposure to human tragedy, inherent physical dangers, pressures to perform correctly in uncertain situations, low pay, long hours, considerable paperwork, lack of administrative support, and the negative attitudes of hospital staff. In this study, the typical "burned out" paramedic is older, is not happy with the work environment, finds the work physically threatening, has difficulties with coworkers, finds recertification demands as a threat to livelihood, and finds the paperwork excessive.

Beaton, Murphy, and Pike (1996) examined work and non-work stressors, negative affective states, and pain complaints among professional firefighters and paramedics. Batteries of questionnaires were mailed to all professional firefighters and paramedics in Washington State. Of the 4,000 questionnaires mailed, 2,050 (50%) were anonymously completed and returned.

The respondent sample consists of 1,730 (87%) firefighters and 253 (12%) paramedics. All of the firefighters surveyed are also trained as Emergency Medical Technicians (EMT's) and respond to medical calls. The overall sample is 97% male and Caucasian, and 80% are married.

A 16-item measure of subjective pain complaints was derived from the Symptoms of Stress (SOS) inventory. The SOS pain scale items include: 10 muscoskeletal pain items, 2 items pertaining to sinus and migraine headaches (1 each), 2 items pertaining to gastrointestinal discomfort, 1 item regarding chest pain, and 1 item inquiring about the frequency of severe pain and whether this pain makes it difficult to work. Respondents rated the frequency of pain symptoms within the past week on a five-point Likert scale. The SOS inventory has been shown to be a reliable and valid measure of stress-related symptomatology in both patient and nonpatient populations (Beaton et al., 1996).

The SOS Depression scale, SOS Anger scale, and SOS Anxiety scale were used as measures of negative affective states. The Sources of Occupational Stress (SOOS) was used to assess work stress in this population. SOOS is a 57-item measure of job-related stressors inherent and/or related to employment as a professional firefighter and paramedic developed by the first and second authors. Edward's Social desirability (SD) scale is a 39-item measure of social desirability test-taking bias used as a measure with this population. Biodemographic, general background, and specific job-related information were also solicited from all survey respondents.

Results from this study revealed that more than 95% of the firefighters and paramedics reported having experienced at least one pain complaint on the SOS pain scale within the past week. Respondents were later divided into younger and older age groups using a median split to see if age was a contributing factor to levels of pain complaints. The older firefighter/paramedic group reported significantly higher scores on the SOS pain scale than the younger group. Five

occupational stressor variables had a significant association with respondent pain complaints: past critical incidents, sleep disturbance, management-labor conflict, and wage/benefit concerns.

Almost one half (48.2%) of firefighter/paramedic respondents reported that severe aches and pain made it difficult to work within the past week. Most respondents reported, on average, multiple pain symptoms within the past week. The most prevalent pain complaints were muscoskeletal in nature. The largest correlation identified in this study was between the SOS pain and anxiety scales. Five occupational stressors were associated with respondent pain complaints. The results also suggest "negative affective states mediated the relationships between work and nonwork variables, and pain complaint outcomes" (p.223).

During 1990-91 professional firefighters job-related injury and occupational illness rates were the highest of any group of U.S. workers (p.224). One factor analytic approach to firefighter and paramedic occupational stressors in this study yielded more than a dozen empirically distinct sources of reported job-related stress. Stressors include: sleep disturbance, potential exposure to pathogens and hazardous materials, past critical incidents, concerns about job skills, conflicts with co-workers and superiors, worries about wages/benefits, and potential job cuts.

In 1996, Grevin compared groups of experienced EMS personnel with paramedic students for PTSD, use of ego defenses, and empathy. Participants were taken from the San Francisco Bay area and included 120 experienced paramedics and 115 paramedic students. Of the paramedic students, some were already trained as EMTs or were firefighters, but most were inexperienced. Three questionnaires were administered during one of each station's quarterly training sessions or during class. The entire process took approximately 20-30 minutes.

PTSD symptoms were assessed using the MMPI-2 PTSD (PK) scale. The PK scale is a 46-item measure with true/false answering. A dichotomous scoring system allows for easy

tabulation, with “true” responses receiving one point. The lifestyle index was used to assess use of ego defense mechanisms. This index has been previously used to assess a variety of populations. The Emotional Empathy Scale was used to measure global empathy among the paramedics and students. The respondents also answered a demographics sheet that was attached to the other questionnaires.

Results indicate the paramedics revealed scores associated with very high stress levels. Cut-off scores for the general population indicated that 20% of experienced paramedics could be categorized as showing symptoms of PTSD. For the paramedics, denial and repression scores were significantly higher than normative means. Regression, reaction formation, compensation, and intellectualization scores were significantly lower than normative means. Paramedic scores also revealed significantly low scores on empathy. These defensive styles may allow paramedics to perform high stress duties with lower levels of anxiety, emotion, and more objectivity.

For the paramedic students, 21.9% of students showed symptoms of PTSD. The finding that high numbers of paramedic students have PTSD symptoms “suggests that individuals who choose to become paramedics may tend to share characteristics predisposing them to particular types of stress reactions” (Grevin, 1996, p.491). Denial, repression, and projection were found to be significantly higher in paramedic students than normative means. Repression and reaction formation were found to be significantly lower. Like paramedics, paramedic students had significantly lower empathy scores.

Both paramedics and paramedic students in this study showed high levels of PTSD symptoms on the MMPI-2 PK scale. This finding may have implications for the paramedics, students, and the patients they care for. “Associated features of PTSD, such as constricted affect and depression, may predispose this population to a variety of psychological and interpersonal problems as well as hindering their ability to make rapid and accurate diagnostic decisions”

(p.491). Research has shown that high stress in paramedics is related to higher rates of absenteeism and turnover rates, work-related injuries, substance abuse, and familial difficulties. There have also been reports of a decrease in overall job performance including inaccurate diagnosis, deficiencies in rational skills, a tendency to trivialize patient's complaints, and displacing negative attitudes onto patients (Grevin, 1996, p.483-4).

Paramedics and students also demonstrated significantly high scores on denial and repression and significantly low scores on regression and reaction formation. Both groups may be predisposed to certain defense strategies that attract these individuals to a profession that others avoid. The use of certain defense mechanisms may be adaptive given the stresses of EMS work. "It is possible that adaptive suppression of anxiety to concentrate on necessary tasks during an emergency situation may later interfere with the recovery process of emergency personnel" (Grevin, 1996, p.491). This may be of major concern considering the continuous and repetitive stress endured by EMS personnel.

Because of the daily stresses of EMS work, some EMS personnel may have a chronic form of PTSD that may be refractory to treatment interventions. Paramedics may also be less likely to seek help because of the use of certain defense mechanisms. Chronic PTSD may lead to increasing difficulties in overall functioning. It is possible that low levels of empathy allow the paramedic to distance from patients and perform duties more effectively. When first starting in the EMS profession, paramedics may not be able to deny the affective impact of the job when faced with high levels of trauma and stress. EMS workers "use high levels of denial, blocking out aspects of the job that are too affectively stimulating or anxiety provoking" (Grevin, 1996, p.492).

This study revealed a positive relationship between denial and empathy. The author suggests that this relationship means that those paramedics who are adept at shutting out

affective stimuli are also more adept in establishing an empathetic rapport with patients. Denial may either predispose or prevent a highly empathetic paramedic from developing PTSD. PTSD scores on the MMPI-2 PK scale were positively correlated with several of the defense mechanisms, "suggesting that the overuse of specific defense mechanisms is in some way related to a maladaptive stress syndrome"(Grevin, 1996, p.491). Denial was the exception to this finding, suggesting that some paramedics may need to distort incoming affect and information in order to avoid developing stress syndromes.

In summary, Grevin's study revealed that some of the factors associated with occupational stress include responsibility for the safety and lives of others, dealing with life and death emergencies in hazardous environments, chronic exposure to human tragedy, and the perception that the public takes advantage of paramedics for routine services in nonemergency situations. PTSD can be severe and may affect many aspects of life; the existence of this disorder among health care personnel would be relevant both in terms of the care they render to patients and in the selection of appropriate clinical interventions for the treatment of impaired health care workers (p. 484).

Beaton, Murphy, Johnson, Pike, and Corneil (1998) studied duty-related stressors in 173 urban firefighters and paramedics from two Northwest cities. The sample was drawn from 500 employees of two urban fire departments. Participants were employed for at least 6 months prior to the study, 88% were Caucasian, 90% were male, and they had an average age of 38-years. A self-report measure of the appraised stressfulness of duty-related incidents actually or potentially experienced was administered as part of an ongoing investigation. The listing of 33 incident stressor scenarios included items such as rare catastrophic events as well as more commonly encountered incidents.

Participants were instructed to rate the stressfulness of each of the incident stressor items on a “0”-“100” point variable analog scale (VAS), with the following anchors “0” = not stressful at all, “50” = somewhat stressful, “100” = extremely stressful. Participants were instructed to rate how stressful an incident stressor was or would be assuming they were present. If the participants actually experienced the incident stressor within the past 6 months, they were asked to recall how many times the scenario was experienced.

There were large differences between participants on their appraisals of the stressor intensity associated with the various incident stressor items, emphasizing the important role of individual response specificity. The most stressful incidents reported were: catastrophic injury to self or of a coworker, gruesome victim incidents, rendering aid to seriously ill and vulnerable victims, minor injury to self, and exposure to death and dying. “Previously reported risk factors associated with emergency worker incident exposures are victim’s ages (e.g. infants and children’s injuries/deaths have a greater impact), exposure to gruesome injuries and/or death, and facing dangerous and/or unpredictable situations” (p. 822).

Regehr (2000) reported a study involving 285 police, fire, and ambulance personnel in the Toronto area with an average of 11 years service. Participants were given the Impact of Event Scale (IES) and the Beck Depression Inventory (BDI), along with personal interviews. Results showed that 22% had PTSD symptoms in the high-to-severe range. The group assessed showed 6.3% abused alcohol, compared to 1.4% before a stressful event; 12.3% reported leave from work because of stress, compared to 0.7% prior to the event; and 4.9% were taking psychotropic medications compared to 0.7% before an incident of high stress.

Factors that demonstrated a role in PTSD symptoms were mainly relational in nature; lack of social support, presence of conduct reviews, lack of departmental support for counseling, and media attention that can prolong symptoms. Those interviewed reported feelings of

abandonment, “exile,” depression, and anger. This research supports the notion that PTSD levels are high in the EMS population, and that there is a perceived lack of social support, as well as a lack of departmental support and counseling (Regehr, 2000).

On April 25, 1988, in Zeeland, Denmark an intercity train derailed at a high speed killing eight instantly. Eighty-three more victims were injured and 15 were hospitalized. Andersen, Christensen, and Petersen (1991) studied posttraumatic stress reactions in rescue workers after the incident. On questionnaires, participants considered this rescue work to be rated as low-to-moderate in stress level compared to other incidents faced by rescue workers. All rescue workers were contacted by letter at 1-2 months following the accident. Rescue workers in this study involved police, firemen, ambulance crews, a technical and practical helping team, civil defense, and a police group that informed relatives of the victims by phone. The letter sent to rescue workers consisted of information about the study, an informed consent for the participant to sign, and a stamped envelope to return the consent.

Participants were mailed a questionnaire at 3 and 7 months post incident. Seventy-seven participants existed in the study after 7 months. At 3 months, participants were administered the Impact of Event Scale (IES), a measure recommended as a screening for victims of disaster. IES was used in this case to measure posttraumatic intrusion and avoidance. The General Health Questionnaire 28 (GHQ-28) was also administered at 3 months in order to measure psychiatric morbidity on four scales: somatic symptoms, anxiety/insomnia, social dysfunction, and depression. The IES and GHQ-28 were readministered at 7 months along with a demographic-type questionnaire.

Twenty-three (30%) claimed physical or mental symptoms at some time following the accident; respondents related these symptoms to the rescue work. At 7 months, eight (10%) still had symptoms related to rescue work; and two had increased their consumption of alcohol and

tobacco and used tranquilizers on a regular basis; two reported severe psychosocial difficulty after the incident, one divorced and the other lost his job. There was a tendency toward intensified symptoms from 3 to 6 months after the accident; results showed that during the time period assessed, the symptoms were increasing rather than decreasing. The most common complaints were somatic in nature, indicating that rescue workers tend to somatize their stress reactions; anxiety and insomnia were frequent also. The authors conclude "no systematic debriefing was organized after the tasks. It is to be expected that debriefing would have reduced the number of stress reactions related to rescue work (Andersen et al., 1991, p. 250)."

On July 17, 1981, the Hyatt-Regency Hotel in Kansas City collapsed killing 114 and injuring 188. On the night of this disaster, many rescue workers, including doctors and nurses, were attending a dance at the hotel when the walls collapsed; these rescuers who became victims had to quickly change roles and act as heroes. Other rescuers soon responded, not knowing the magnitude of the call. The firemen were especially bothered by the incident because they knew their chief was in the building and not among the survivors. They later recovered his unrecognizable remains in the rubble. Many factors made the disaster especially stressful for rescue workers: the disaster was manmade, the amount of trauma, mutilation, and death, the lack of warning, and the fact that colleagues were involved.

After the Hyatt-Regency Hotel disaster Miles, Demi, and Mostyn-Aker (1984) conducted research in order to help describe the emotional and physical reactions and help-seeking behaviors of rescue workers following the incident. Data were collected from 54 rescue workers involved in rescue. Seventy-two percent of the participants were male; 26% were firemen; 24% were nurses; 18% were emergency medical technicians (EMT's); 15% were morticians; 4% were physicians; and 14% were in non-health-care related occupations. Participants worked from 2 to 24 hours with an average of 9.2 hours.

Participants were recruited from different agencies responding to the disaster. Those who took part in the study were either mailed a questionnaire or given one personally by the researchers. Participation was voluntary and no names were required in order to protect anonymity. Participants were administered the Hopkins Symptom Checklist (HSCL), a 58-item self-report inventory that measures psychiatric symptoms. The HSCL gives one overall score and 5 subscores measuring: somatization, obsessive-compulsive behavior, interpersonal sensitivity, anxiety, and depression. The Health Assessment Scale was given in order to assess physical health; this measure also includes a drug usage scale. The Disaster Personal-Experimental Questionnaire (DPEQ), which deals with disaster reactions, was also administered to participants. The DPEQ includes structured and unstructured questions about specific roles and reactions to the disaster. The rescuers reaction to the event is extremely important, "it is the perception of what occurred that may be the critical determinant of outcome" (McFarlane, 1995, p.248).

The most common reactions were sadness/depression in 60%, frustration/irritability in 40%, vulnerability in 38%, numbness in 36%, and dreams/nightmares in 35%. Sights, sounds, and smells may trigger recall of stressful events. Twenty percent reported that these triggers occur daily, while 44% reported experiencing triggers weekly to monthly. The most common trigger reported was media coverage, with sounds being second most frequent. Seventeen percent reported that their health was worse since the accident. Emotional/psychological and muscoskeletal problems were the most frequent health complaints. Thirteen percent indicated that their psychological needs in relation to the disaster had not been met by their employers.

Mental health counseling was sought by 39% of participants in the study; 28% used individual counseling, and 24% used debriefing. Forty-five percent of rescue workers reported that talking and sharing experiences was the most helpful way of dealing with stress. Participants

expressed feelings of helplessness, frustration, vulnerability, and fear for personal safety after the incident. Some subjects reported an increase in the use of tobacco, caffeine, alcohol, and tranquilizers. Sixty percent of respondents reported they sought help from family, friends, or co-workers in order to cope with the situation; this is further evidence that social support is extremely important within the EMS population. Researchers conclude that "since talking and sharing was perceived as the most helpful modality, such programs should facilitate this coping strategy" (Miles et al., 1984, p. 328).

Raphael, Singh, Bradbury, and Lambert (1983) studied the effects of disaster on rescue workers 1 month following a rail accident in a Sydney, Australia suburb. A commuter train carrying passengers into the city derailed and crashed into part of a concrete bridge that then collapsed onto the train. Many frustrations were reported by rescuers on the scene: the congestion at the site, the size of the bridge and difficulty moving it, and the inability to use certain rescue materials because of the risk of fire and noxious fumes. Rescue workers included police, medical teams, fire, rail, ambulance, emergency service, voluntary rescue groups, as well as other volunteers.

One month after the disaster, a formal review of the functioning of various respondents was organized by the central organizing authority of the Disaster Plan for the City of Sydney. At this meeting, rescue workers were contacted and volunteers were recruited. A brief questionnaire was developed in order to help understand the needs of disaster workers. The questionnaire was answered by 23 policemen, 17 nurses, 14 ambulance workers, 11 doctors, 7 Salvation Army employees, 6 forensic workers, 5 social workers, 5 members of the Nepean rescue squad, 2 firemen, and 3 other health service providers; 90 total. Many of the respondents worked continuously on the scene of the accident for up to 32 hours. Debriefings were held as needed in order to reduce the trauma of the situation.

Results included that 45 of the participants felt as if their lives were in danger during the accident. Disaster workers were asked whether the experience was stressful and to specify the most stressful aspects. Seventy-seven of the participants found the experience stressful. There were five distinct categories of stress: feelings of helplessness, the magnitude and unexpectedness of the disaster, the sight and smell of mutilated bodies, anguish of relatives and suffering of individuals, and working under pressure. The disaster had a significant impact in the areas of anxiety, depression, and sleep disturbances; 23% were more anxious, 26% had feelings of depression, and 23% had been sleeping poorly. All of the participants who participated in debriefing sessions were unanimous in their opinion that it was a positive experience.

One year after this study, 13 of the original 90 were interviewed. Nine of the 13 were still experiencing some type of psychological disturbances related to the disaster. Many reported difficulty readjusting to normal life after the incident. The researchers conclude by stating the importance of debriefing and the need to incorporate more debriefing programs into organizations working on disaster scenes.

Coping Resources in Emergency Workers

Paramedics routinely list infant deaths, child abuse, mass casualties, disaster, and high-rise fires as the most stressful calls that they handle. Rescue workers may be seriously affected by traumatic events “because they suppress their reactions in order to maintain their ability to function during the incident and because they fear debilitation from their own emotions within their family systems or other aspects of their personal lives” (Mitchell & Dyrgrov, 1993, p. 911-12). The following studies investigate how rescue workers cope with this especially stressful work.

Eriksson, Kemp, Gorsuch, Hoke, and Foy (2001) studied trauma exposure, PTSD symptoms, and social support among International Relief and Development Personnel. The

respondents in the study reported high direct and indirect exposure to life-threatening events. One hundred thirteen participants completed questionnaires dealing with trauma exposure and emotional responses to the traumas. First, participants completed a demographics questionnaire followed by the Los Angeles Symptom Checklist (LASC). The LASC is a Likert-type rating scale from 0-(not a problem)-to-4 (an extreme problem) that assesses for trauma symptoms and the extent of these symptoms. The LASC can be used to yield a DSM diagnosis of PTSD.

Following administration of the LASC, a survey of exposure to traumatic events was answered by participants. This survey listed 36 possible traumatic events that could exist in a relief and development setting. This survey was adapted from different surveys of community violence. A "personal life threat index" was derived by taking the participant's personal exposure to 13 specific events on the survey deemed as life threatening by a group of trauma researchers. A "vicarious exposure to life threat index" was developed by taking the sum of 13 items on the survey dealing specifically with secondary exposure. The Support Rating Scale was then used to measure perceived social support. Participants were asked to either agree or disagree with statements relating to social support.

Ten percent of the participants met the full criteria for PTSD. Approximately 51% reported moderate problems in at least one of the symptom clusters for PTSD. Higher levels of PTSD were generally associated with higher exposure to life threatening events, unless there were also high levels of social support. "This finding suggests that social support may act as a 'buffer' for those with high levels of trauma exposure" (Eriksson et al., 2001, p. 211).

Chang, Lee, Connor, Davidson, Jeffries, and Lai (2003) studied posttraumatic distress and coping strategies among rescue workers following an earthquake. On September 21, 1999, an earthquake rating 7.3 on the Richter scale hit Taiwan resulting in 2,405 deaths and 10,718 injuries. This study included rescue workers who responded to the Tunghsing building, a 12-

story building that collapsed immediately after the earthquake. After 10 days of rescue work at the Tunghsing building, it was determined that 87 were killed, 166 had been rescued, and 22 bodies remained buried in the rubble.

The sample included data from 84 professional firefighters in the Taipei City Fire Department. All participants were male, most unmarried, with a mean age of 27.6 years. A 4-page self-rated questionnaire was designed to examine the psychological impact and coping strategies of firefighters 5 months after the earthquake. Questionnaires included a demographics page; assessment of exposure to the dead and injured at the scene of the incident; the Chinese Health Questionnaire (CHQ) assessed psychiatric morbidity; the Impact of Events Scale (IES) was administered in order to quantify the effects of the stressful incident; and the Ways of Coping Questionnaire (WCQ) was administered in order to assess coping strategies of rescue workers.

Results on the CHQ show psychiatric morbidity in 14 of 84 (16.7%) firefighters. Participants with psychiatric morbidity were more likely to be older, with more job experience, married, and to have severe total intrusive and avoidant symptoms. Those with psychiatric morbidity used coping strategies such as confrontation, distancing, self-control, seeking social support, escape-avoidance (describes efforts to escape through acts such as wishful thinking, eating, drinking, smoking, using drugs or other medications, or sleeping), planful problem solving, and positive reappraisal.

Results from the IES showed that posttraumatic morbidity was present in 18 of 84 (21.4%) firefighters. This group had more firefighting experiences, more contact with dead bodies, and a higher CHQ score and were more likely to adopt more coping strategies such as confrontational coping, distancing, self-controlling behaviors, seeking social support, acceptance of responsibility, escape-avoidance, and planful problem solving. Longer job experience and

greater use of distancing and escape-avoidance were the significant risk factors for posttraumatic morbidity, while positive reappraisal acted as a significant protector of posttraumatic morbidity. Only six subjects qualified for both psychiatric and posttraumatic morbidity. In summary, a large number of firefighters in this study show high levels of either psychiatric or posttraumatic morbidity. Longer job experience is highly correlated with psychiatric and posttraumatic morbidity. This study also demonstrated that younger firefighters had less psychiatric and posttraumatic morbidity than older firefighters, probably because of shorter exposure to traumatic events.

Shakespeare-Finch, Smith, and Obst (2002) studied trauma, coping, and family functioning in EMS personnel. Participants included 39 male ambulance workers from Queensland Ambulance Service (QAS) located in Australia. QAS workers were compared to a control group consisting of 32 males from a variety of occupations that do not experience traumatic events in their daily work (e.g. chef, hotel employee, telecommunications worker). Both groups of participants were limited to married men with dependent children in their homes.

QAS personnel that met the criteria of the study were contacted by telephone and invited to participate in the study. A letter of consent, a questionnaire, and a self-addressed stamped envelope were mailed to the personnel who agreed to participate. Questionnaires were answered by participants and mailed back to the researchers. The control group consisted of individuals who met criteria for the study who responded to several advertisements in local community notice boards and newsletters. Control group participants spoke with researchers by phone, and a research package was mailed to them. All participants were sent a letter of appreciation and a research summary.

Participants were given a single questionnaire which included six biographical questions and two published test instruments. The Intimacy Conflict Parenting Styles (ICPS) was used to

measure family relations and functioning, specifically: intimacy, conflict, and parenting style. The ICPS is a 30-item questionnaire in which responses are measured on a 6-point Likert-type scale. The Personal Resources Questionnaire (PRQ) is one section of the Occupational Stress Inventory (OSI) that measures coping resources of the individual. This inventory has been used in emergency service populations and is intended to measure the ability to cope with occupational stress. The PRQ has 4-subscales, each containing 10 items that specifically measure resources of recreation, self-care, social support, and rational cognitions.

Results from this research indicate that social support is an important coping mechanism in both the ambulance population and the control group. For ambulance personnel, both social support and rational/cognitive strategies were found to be significant correlates of conflict and parenting styles. Ambulance personnel demonstrated more varied coping strategies in association with family functioning. Social support, rational/cognitive, and self-care all correlated significantly with intimacy in this group. Additionally, rational/cognitive strategies were significantly associated with conflict in the ambulance group. The researchers concluded that the demonstration of a wide range of coping strategies in the ambulance population gives "credence to the existing training and intervention programs in the QAS" (Shakespeare-Finch et al., 2002, p. 281); the researchers specifically mention CISM and debriefing sessions.

James (1998) studied perceptions of stress in British ambulance personnel. First, exploratory surveys were designed using interviews from ambulance personnel. Fifty-five questions dealing with sources of stress were created. Alternate forms of each question were designed in order to make two questionnaires; reliability and validity were then tested. Forty-two of the original 55 question pairs were kept in the study. A locus of control questionnaire was also administered to participants; the questionnaire asked demographic type questions such as length

of service, gender, age, etc. Respondents were asked to rate each source of stress for intensity of occurrence on a five-point Likert scale.

Of the 394 final questionnaires returned, data from 244 were randomly selected for further analysis. Remaining questionnaires were later used for comparison purposes in order to evaluate and establish validity. Only returns from male respondents were used because of the small number of females who replied; questionnaires with missing data were also excluded. Results suggest that ambulance personnel with longer service and an internal locus of control are more satisfied and experience less stress. How the ambulance worker copes with trauma is "dependent on how much control he perceives he has over the situation" (James, 1998, p. 326).

PTSD Symptoms and Lack of Adequate CISM

Dionne (2002) interviewed more than 70 EMS personnel who were among the "first-in-personnel" at the 9/11 attacks against the World Trade Center in New York City. The purpose of this research was to look for PTSD symptoms a year after the terrorist attack. This research involved personal interviews with each of the providers in September 2002. Each participant's interview was voluntary and anonymous so that participants could express themselves fully and remain honest. The only way of identifying participants was a number the participant selected and was attached to the interview; the numbers selected did not correlate with the number of participants interviewed.

Open-ended questions were used, and the participants were asked to describe the events that occurred on 9/11, their involvement in the rescue efforts, if they received counseling, and any current problems that may be associated with 9/11. Collectively, the interviewer found that the EMS personnel in the study showed high levels of PTSD symptoms a year after the stressful incident. The major symptoms described by the entire sample were: nightmares about 9/11, flashbacks triggered by the media about the incident, sleep disturbances, and behavioral changes.

Different symptoms for different individuals lessened in the months following 9/11/2001 but had not disappeared completely (Dionne, 2002).

The author described four other major sources of stress for those interviewed. Stressor #1 was inconsistent CISM. Many EMS agencies involved with 9/11 did not provide formal CISM to employees who worked the scenes surrounding 9/11. Counseling was made available at some local schools, but rescuers said more was needed. Those interviewed showed resentment and hostility toward their employers because they were perceived as not being there for their employees in a time of great need. There was a lack of social support for employees, which may have made PTSD symptoms worse. According to this research, very few employers provided the CISM services that were needed and wanted (Dionne, 2002). All providers interviewed said they wanted a formal debriefing following 9/11, but few received it.

Stressor #2 was the lack of adequate counseling provided to rescuers following 9/11. All who were interviewed were offered counseling of some type in the 12 months following 9/11, but those interviewed were upset it was not offered in the initial stages of the response when needed most. Most respondents had no department sponsored counseling during the first months following 9/11; the counseling provided came from EMS unions. Again, there was resentment toward employers for lack of social support, and CISM, as well as counseling, were neglected in the initial stages. Other research supports this study; it was found that social support is highly correlated to increased levels of PTSD symptoms in EMS personnel. One study compared three groups of paramedics with different levels of PTSD symptoms and found that lack of social support was the strongest predictor of higher levels of PTSD symptoms (Stone, 1999). Another study of PTSD in paramedics revealed that lack of social support and increased occupational conflicts are positively correlated and directly related to stress symptoms (Beaton, Murphy, & Pike, 1996).

Stressor #3 was punitive responses to 9/11. All of those interviewed reported personal behavioral problems or seeing problems in co-workers since 9/11. Rescuers reported fighting at work, more arguments, and increased numbers of suicides among other EMS personnel in New York. Many also complained of being forced to work at ground zero with little or no sleep and with already present PTSD symptoms. Others complained that they were refused time off and accused of malingering by supervisors (Dionne, 2002).

Stressor #4 recognized by the interviewer is local and national disregard for EMS contributions and losses. This involves media misrepresentation of EMS and its roles during 9/11, underreporting of EMS deaths during 9/11 and other disasters, and commercializing 9/11 and EMS. The providers in this study were especially upset that people were selling and wearing Fire Department of New York (FDNY) and 9/11 memorabilia, implying others knew what they went through.

This interview-based research supports the idea that EMS personnel show high levels of PTSD, and that services such as CISM/CISD are in need and demand. FDNY tracks behavioral incidents among employees; comparing figures from September 2000 to March 2002, there have been major increases in the incidents of domestic violence and other behavioral incidents among EMS personnel in New York (Dionne, 2002). Also supported is the idea that CISD is often not offered, or not applied the way it was intended.

Other Measures of CISD and Support

Deahl, Srinivasan, Jones, Neblett, and Lolly (2001) researched other problem behaviors and social dysfunction associated with PTSD and the effectiveness of CISD in a group of soldiers. One hundred six soldiers with PTSD symptoms were assessed for potential alcohol abuse upon returning from UN peacekeeping operations in Bosnia. CAGE, a validated and accepted measure of problem drinking, was used to assess the soldiers. The acronym “CAGE”

was developed from the first four questions on the measure. “C” for the need to “cut down “ on alcohol use, “A” for “annoyance,” “G” for “guilt”, and “E” for “early” morning use of alcohol. Over 25% of the sample showed scores highly correlated with alcohol abuse. The soldiers were then divided into two groups, with one group given a single debriefing session and the second group receiving no debriefing.

A 12-month follow-up CAGE showed a drop in scores. Less than 17% showed scores highly correlated with alcohol abuse. The drop in scores was seen mainly in the group that received the debriefing session. Alcohol abuse was significantly associated with PTSD symptoms, past psychological history, and exposure to direct and indirect combat in Bosnia. After a 12-month follow-up, only 3 of the 106 soldiers showed significant PTSD symptoms; so a debriefing effect could not be determined. There was, however, a drop in CAGE scores after debriefing suggesting a possible direct effect on alcohol consumption or possibly that returning from Bosnia reduced the drinking behavior (Deahl et al., 2001). This study supports CISM but cannot demonstrate a significant link between debriefing and stress reduction. This supports the previous findings that CISM should not be used alone but as a process.

One study supporting CISD and crisis counseling was conducted by Jordan (2002) who compared two crisis intervention techniques used by a single marriage and family counselor who served as a crisis counselor in New York for rescue personnel and college populations after 9/11. The author provides an overview of CISD and one-on-one counseling, and then gives actual accounts for each technique. CISD was provided to a group of individuals exposed to a trauma, whereas crisis counseling was provided to a single individual.

A team of two counselors provided education and crisis counseling to students and rescue workers 7 days after the 9/11 attacks. The individuals involved in counseling were in the beginning stages of PTSD symptoms and voiced need for debriefing. At one New York college,

the counselors used one-on-one counseling as well as CISD on a group of students, faculty, and staff who witnessed the attack. Two different techniques were used because it is believed no one technique works for everyone, and both are believed to be effective ways of dealing with stress and crisis. Reactions to stress and disaster are not always negative, so counselors carefully assess individuals for unique reactions and PTSD symptoms that may need further intervention.

The author showed positive outcomes of CISD and one-on-one counseling that were used in this situation and when used the way they were designed to be applied. During debriefing, steps of CISM were followed appropriately and there was a positive response. During debriefing, one person left the room after becoming extremely upset. At that point, one counselor continued with the group while the second counselor attended to the individual with one-on-one counseling. This particular respondent opened up well and gained follow-up treatment. This particular study supports the effectiveness of CISD and crisis counseling when used appropriately although the author recommends further scientific research (Jordan, 2002).

The goal of a research study by Hokanson and Wirth (1999) was to assess whether CISD is effective in treating PTSD symptoms, and whether the helpfulness in one individual correlates with that individual recommending the process to others in need. A survey was given to all employees of the Los Angeles County Fire Department (LACoFD) because the department uses the entire process and CISM and has a large population of employees. Selected peer and mental health members of the CISM team developed the 26-question survey for LACoFD including questions related to the stated goals. Open-ended and fixed-alternative questions were asked on the survey; the fixed alternative questions were answered on a 4-point Likert scale rating the helpfulness of CISD. A demographics page was included in order to assess age, gender, tenure, ethnicity, and battalion.

The survey was distributed in September 1996 and returned the following month; the survey produced valid data from 2,073 personnel. For the first research question regarding symptom reduction for the debriefed versus groups with no debriefing, 39% of those debriefed reported symptom reduction within 24 hours of the session; an additional 17% showed symptom reduction within 24-72 hours, 18% within one week, 12% within 3-6 months, and 14% still had symptoms. Twenty-nine percent of the non-debriefed group reported symptom reduction within the 24-hour time frame; 18% reported symptoms lasting 3-6 months, and 17% still had symptoms. These results suggest that the group receiving debriefing did benefit from the process.

Researchers then grouped those with symptom reduction up to 1 week in one group, and those with symptoms 3 months or longer into a second group and compared the group's results using Cochran's Q-test. It was found that the probability of significant symptom reduction in 1 week or less was significantly higher when individuals were debriefed (74.7%) than when not debriefed (25.3%). In those who received debriefing, they were bothered by symptoms for a shorter period of time. The survey also showed that 79% of the debriefed group would also recommend the process (Hokanson & Wirth, 1999). This research supports CISD when used correctly within a process and demonstrates symptom reduction with its use.

CISD with Few Effects

Other studies have shown no effects using CISD. Harris, Baloglu, and Stacks (2002) examined the relationships between debriefing and several mental health factors. One thousand seven hundred forty-seven firefighters were surveyed in a Federal Medical Management (FEMA) study involving a demographics page and survey. The demographics page assessed ethnicity, gender, volunteer status, education level, marital status, language, and age. Eight hundred fifty-two met the research criteria for inclusion into the survey, all reporting a stressful incident at work within the past 6 months.

Of the 852 firefighters meeting criteria, 264 had attended a debriefing related to a stressful incident experienced within the 6 months prior to the study. In order to make the debriefed and non-debriefed group more equivalent, SPSS SELECT was used to pull 396 participants from the non-debriefed group. Six hundred sixty cases were involved in the final sample, all reporting critical incidents, and 40% attending CISD. It is unclear whether CISD was performed alone or within the step-by-step process for which it was intended.

Six major variables were assessed: avoidance, coping, perceived social support, negative affectivity, world assumptions, and PTSD symptoms. All measures were entered into a model of factor analysis using statistical analysis software. Measurement of association of the five variables with debriefing and no debriefing was also analyzed. The results showed no differences between any of the groups in regards to information taken from the demographics page. No evidence was found for a significant correlation between debriefing, coping skills, and PTSD symptoms. The authors did find a weak but positive correlation between debriefing and measures of mental health constructs (Harris et al., 2002).

Higher PTSD in Women

Most of the research regarding gender and PTSD symptoms has found that women tend to show higher levels of PTSD symptoms than men. Bryant and Harvey (2003) studied PTSD, Acute Stress Disorder (ASD), and gender differences in 171 participants involved in serious motor vehicle crashes with admissions to a hospital. Seventy-nine men and 55 women were assessed for PTSD symptoms at 1 and 6 months post incident by a clinical psychologist with greater than 5 years experience with traumatized individuals. Participants were initially assessed with the Acute Stress Disorder Interview (ASDI) and given the Beck Depression Inventory (BDI). At 6 months post-incident, participants were assessed for PTSD symptoms with the Composite International Interview (CIDI).

Results from this study indicated that women demonstrated stronger dissociative reactions and ASD than men. Ninety-three percent of women with ASD went on to develop PTSD within 6 months; while only 57% of males with ASD went on to develop PTSD within the same time frame. In this study, PTSD was diagnosed in fewer men than women (15% versus 38%).

Zlotnick, Zimmerman, Wolfsdorf, and Mattia (2001) compared 99 women and 39 men with PTSD who sought treatment at an outpatient private practice. Participants were assessed using the Structured Clinical Interview for the DSM-IV (SCID). Results showed that a significantly higher proportion of women received a diagnosis of PTSD. Not only were women more likely than men to meet criteria for PTSD, they were also more likely to have more reexperiencing symptoms.

Fullerton et al. (2001) assessed gender differences in PTSD after serious motor vehicle crashes. Sixty-four men and 58 women were assessed with the structured clinical interview for the DSM-III-R (SCID) and the Peritraumatic Dissociative Experiences Questionnaire – Rater Version 1 month after the accident. Results showed that women were at greater risk for certain reexperiencing symptoms such as increased distress in situations acting as reminders of the traumatic event. In this study, women were 4.7 times more likely than men to meet overall avoidance and numbing criterion for PTSD, and 3.8 times more likely to meet overall arousal criterion. More than 30% of trauma victims develop persistent PTSD with women being twice as likely to suffer from PTSD (Foa & Street, 2001).

Prevalence estimates based on National Comorbidity Survey (NCS) data indicate that women are one and a half to two times more likely than men to meet lifetime criteria for PTSD (11.3% versus 6.0%). In a sample of 1000 young adults, Breslau and colleagues found that substantially more women than men met criteria for PTSD after trauma exposure (Pigott, 2003).

According to Seedat and Stein (2000), the lifetime rate of PTSD has been estimated at 10.4% for women and 5.0% for men. Men have a higher exposure to traumatic events (60.7% versus 51.2%), but women are more likely to develop PTSD and symptoms persist longer in women. Women are also more likely to develop avoidance, numbing, re-experiencing, and hyperarousal than men.

Castillo, Fallion, C'DeBaca, Conforti, and Qualls (2002) assessed PTSD, anger, and gender differences. Participants included 85 male veterans with duty related PTSD referred for general anger treatment and 21 women with PTSD who were either on active military duty or veterans enrolled in a sexual trauma treatment program in the Southwestern United States. Participants were given the Buss Durkee Hostility Inventory (BDHI), which is a true/false inventory with eight scales assessing the following: assault, individual hostility, irritability, negativism, resentment, suspicion, verbal hostility, and guilt.

The BDHI was administered prior to and after the skills training program completion. Results showed that men with PTSD were significantly higher than women in areas of assault, individual hostility, irritability, and verbal hostility. Women with PTSD experience more cognitive dimensions of anger such as re-experiencing the event, feelings of guilt, suspicion, resentment, and negativism. This study, as well as the other studies mentioned, supports the theory of the current study that female EMS providers should show higher PTSD symptoms than their male coworkers.

Similar Levels of PTSD in Men and Women

Other studies have found similar results among men and women with PTSD symptomatology. McGruder-Johnson, Davidson, Gleaves, Stock, and Finch (2000) studied 82 men and 140 women who were exposed to violent events and assessed for gender and ethnic differences in relation to PTSD symptoms. Participants were given a demographics

questionnaire, the Lifetime Involvement in Violent Events Survey (LIVES), to assess direct and secondary exposure to 19 different traumatic events and the Trauma Symptom Inventory (TSI) that assess PTSD symptoms. Results were that "the relationship between exposure and symptomatology did not differ significantly across ethnic or gender groups" (McGruder-Johnson et al., p.217). Men did report more sexual concerns and dysfunctional sexual behavior than the women in this study.

Freedman et al. (2002) conducted a study in Jerusalem assessing gender differences in relation to reactions to traumatic events. Ninety-three men and 104 women between the ages of 16 and 65 who were taken to the emergency department after a trauma were assessed at 1 week, 1 month, and 4 months for PTSD symptoms. Participants were assessed by the Structured Clinical Interview for the DSM-IV (SCID). Participants were also given the Clinician Administered PTSD Scale (CAPS) to assess for symptom frequency and severity; the Impact of Event Scale (IES) which is a 15-item self-report measure for stress related symptoms and; the Mississippi Scale for combat related PTSD – Civilian Version (MISS) self-report questionnaire which evaluates global intensity of PTSD symptoms. These instruments were given at 1 and 4 months. The Peritraumatic Dissociative Experience Questionnaire (PDEQ) which is an eight-item rating scale assessing recall of dissociation experiences during trauma; the State-Trait Anxiety Inventory (STAI-State), a self-report for current anxiety levels; the Beck Depression Inventory (BDI), a self-report of depressive symptoms; and the Trauma History Questionnaire, a self-report of lifetime trauma exposure.

In addition to the other measures, a trauma severity score was established by averaging 12 individual evaluations made by experienced mental health professionals. The professionals each listened to audio taped interviews. Traumatic events were rated for severity on a 1- (not severe) -to-10 (extremely severe) scale. From the scores given by the raters, an average score

was given for each participant. Results from the various assessments showed no significant gender differences in terms of the incidence of PTSD, and there were similar recovery rates between genders. Freedman et al. (2002) suggest that using a prospective design in this study may explain the lack of gender differences in these results compared to other studies that typically have used cross-sectional designs.

One cross-sectional epidemiological survey by Unwin et al. (2002) compared gender and PTSD symptoms in Persian Gulf War veterans in three randomly selected United Kingdom military cohorts. Twelve thousand, seven hundred fifty participants (4,250 for each cohort) were assessed for PTSD symptoms using The Mississippi Scale (MISS). In this study it was found that "women in the armed forces are no more vulnerable to fatigue, psychological distress, or post-traumatic stress reaction than their male service counterparts" (Unwin et al., p.412).

The Current Study: Statement of the Problem

There are many contradictory findings in regards to CISD and its effectiveness. There are probably methodological reasons why research has produced both positive and negative findings. Much of the positive research involves single-subject designs, small populations, or interview-based findings. Also, where larger populations are employed, correlations between PTSD and debriefing often indicate CISD is an effective tool for reducing symptoms. On the other hand, a great deal of negative findings about CISM only looks at part of the CISM process, and CISD was designed to be employed as a unified process. Little research looks at specific factors such as gender, whether CISD was offered or given appropriately, if there is perceived departmental and social support, levels of education and training, and the rural populations; most research is performed in large cities.

Further research is needed to explore EMS in rural areas in order to better assess whether this group is neglected in areas of mental health and debriefing. It is possible that the rural

population may have unique problems such as a greater chance of friends, acquaintances, and family being patients. Information obtained could lead to the development of appropriate counseling and debriefing programs to assist this population. It is also important to identify risk groups within the EMS populations; women may show higher levels of PTSD symptoms, as well as those with less training and education. Identifying higher risk groups may lead to the development of specialized counseling and EMS training programs that helps target populations within this field.

Assessing perceived social and departmental support and whether CISD is even available can help improve departmental policies regarding mental health services. This could also lead to management and employee training programs that better explain stress and social support, leading to the improvement of working conditions within EMS. Overall, the main goal of this research is to keep PTSD at a minimum within the high-risk population of EMS and providing appropriate support and mental health care when these symptoms do arise.

Objectives of the Current Study

This study examines the EMS population's reaction to traumatic events experienced while at work and the levels of PTSD symptoms. This study examines the following hypotheses:

1. Male EMS providers will have fewer PTSD symptoms than their female coworkers.
2. Advanced EMS providers will have fewer PTSD symptoms than basic trained providers.
3. EMS providers receiving appropriate debriefing will show fewer PTSD symptoms than EMS providers receiving no debriefing.
4. Advanced male EMS providers will have fewer PTSD symptoms than female basic trained providers.
5. Male EMS providers receiving debriefing will have fewer PTSD symptoms than female EMS providers receiving no debriefing.

6. Advanced EMS providers receiving debriefing will have fewer PTSD symptoms than basic trained EMS providers receiving no debriefing.
7. Male advanced EMS providers receiving debriefing will have fewer PTSD symptoms than female basic trained providers receiving no debriefing.

CHAPTER 2

METHOD

Participants

The sample consisted of 219 EMS personnel from Southwest Virginia, Southern West Virginia, and Northeast Tennessee. Of this sample, 168 were men and 51 were women. The age of the participants ranged from 19 to 74 years with a mean age of 35.4 years. The mean years of involvement in EMS for the sample was 12.5 years and 64.4% of the sample were advanced life support providers. The personnel surveyed were high school graduates, worked for paid systems, and worked on ground crews at 53.0%, 43.4%, and 84.0% respectively. The majority of the sample was married (58.4%) and 10.6% were divorced. Table 1 shows the types of samples surveyed, the number of each category surveyed, and the corresponding percentages.

Table 1
Descriptive Statistics

Category	**Number**	**Percent**
Sex:		
Male	168	77
Female	51	23
Level of Training:		
Aavanced Life Support (ALS)	141	65
Basic Life Support (BLS)	77	35
Education:		
High School	116	54
Associate's	63	29
Bachelor's	27	12
Master's	8	4
PhD/M.D.	1	1
Type of System:		
Volunteer	35	17
Paid	90	45
Both	80	38
Type of Service:		
Ground	184	87
Air	7	3
Both	19	9
Marital Status:		
Married	128	59
Single	56	25

Table 1 (continued)

Separated	11	5
Divorced	23	11
Total number of participants =	219	

Materials

A demographics questionnaire (Appendix A) that included questions about age, gender, level of training, years in EMS work, marital status, number of children, exposure to stressful events related to work, debriefings attended, helpfulness of debriefing sessions, reasons for attending debriefing, the type of debriefing process, alcohol and drug abuse, level of education, and hobbies or other means of stress relief was administered to participants. The demographics sheet assisted with the research questions involving gender, level of training, and debriefing. Other information can be used for running post hoc tests and assessing significant interaction effects within this population.

Dependent Variables Measure

Participants were given the Los Angeles Symptom Checklist (LASC, Appendix B), a self-report measure of PTSD symptomatology (King, King, Leskin, & Foy, 1995). The LASC contains 43 items; 17 items measure reexperiencing, avoidance, and hyperarousal that can be scored to yield a DSM-IV diagnosis. Other items assess the participant's physical status, social competence, general psychological distress, and suicidality. Individuals rated symptoms on a 0- (no problem) to-4 (extreme problem) Likert-type scale. In addition to a single diagnosis of PTSD, the LASC provides continuous measures of the following: general PTSD severity (sum of the 17 items), three PTSD subscales (separate sums of the items representing reexperiencing, avoidance, and arousal), and general distress and adjustment problems (sum of all 43 items). The LASC has been validated across a broad range of traumas.

The LASC has high internal and test-retest reliability and acceptable convergent validity with respect to the Structured Clinical Interview for DSM-III-R (SCID-R). In a recent analysis involving 874 individuals with mixed trauma, alphas for the 17 and 43 items were .94 and .95 respectively. The 2-week test-retest reliabilities were .94 and .90 respectively when assessed in a group of Vietnam veterans. Using the 17 items as a continuous variable, comparing LASC and the SCID in measuring PTSD symptoms, sensitivity was .74 and specificity .77; when the 17 items were scored to generate a DSM-III-R diagnosis, its sensitivity and specificity to the SCID-R was .78 and .82 respectively (Briere, 1998).

IRB Process

After approval was received from the IRB, the researcher began by contacting various EMS agencies in Southwest Virginia, Southern West Virginia, and Northeast Tennessee. Permission was obtained from the agency captain by a signed letter of permission (Appendix D) to attend one of the agency's scheduled meetings. At this meeting the purpose of the study and confidentiality was explained through the reading of a brief participant introduction (Appendix C). At that time, volunteers were given a research packet, which began with the participant introduction that explains the process and confidentiality. Next, the participants completed the demographics questionnaire followed by the LASC, which took approximately 20 minutes to complete.

Research Design

This study contains three independent variables: gender, training, and treatment (debriefing); number of PTSD symptoms is the single dependent variable in the research. The first independent variable will compare males and females. The second independent variable is training at two levels, basic versus advanced EMS providers. Basic providers include first responders, emergency medical technicians (EMT's), and shock trauma technicians. Advanced

providers include providers able to perform advanced procedures such as cardiac monitoring, drug therapy, etc. Advanced providers include paramedics, critical care paramedics, intermediates, cardiac technicians, and emergency nurses working in the EMS field. The third independent variable is debriefing versus no debriefing. Participants will be questioned about whether they have ever received debriefing and whether debriefing occurred within the complete CISM system or alone. CISD will be considered appropriate if it was performed within the appropriate time frame following an incident and if it was used within the complete CISM system. The dependent variable, PTSD symptoms, will be measured by the LASC. A 2x2x2 between subjects ANOVA with unequal n set at an alpha level of $p < .05$ will be used to assess the data collected.

CHAPTER 3

RESULTS

Descriptive Statistics

The 49.8% of the population that received debriefing gave an average rating 4.34 on a helpfulness scale of one to seven. Twenty-two percent of the sample was not offered debriefing services when they felt it was needed. The continuous results of the LASC revealed that 16.4% of the sample has Posttraumatic stress disorder (PTSD), while 20.5% of the sample met the requirements for partial PTSD (PTSS).

Univariate ANOVA

A univariate analysis of variance (ANOVA) was conducted on the sum of the 17 questions of the Los Angeles Symptom Checklist (LASC) that directly correlate to PTSD. This ANOVA revealed a significant main effect for the gender variable, F (1, 214) = 10.764, $p \leq .05$. Women reported higher levels of PTSD as this study predicted. The debriefing variable also revealed a significant main effect, F (1, 214) = 4.873, $p \leq .05$. This reveled to be the opposite of the hypothesis stating that those receiving debriefing would have lower PTSD symptoms than those receiving no debriefing.

There were significant differences between men and women in reporting PTSD symptoms. Women (M = 18.427, SD = 1.597) were more likely to report experiencing PTSD symptoms than their male counterparts (M = 12.296, SD = .971). There were also significant differences between those who had received debriefing and those who had not. Subjects who had undergone debriefing (M = 17.424, SD = 1.342) exhibited worse symptoms of PTSD than those who had not undergone the process (M = 13.299, SD = 1.300).

An ANOVA was also performed on the sum of all 43 items of the Los Angles Symptom Checklist to gain a global assessment of distress. This analysis also yielded a

significant main effect for the variable of gender F (1, 210) = 7.100, $p \leq .05$ and debriefing F (1, 210) = 3.924, $p \leq .05$. This also showed that women (M = 32.778, SD = 3.078) reported higher levels of stress than the men (M = 23.203, SD = 1.855) illustrated in Figure 1. Again, statistically, subjects who had undergone debriefing (M = 31.550, SD = 2.602) exhibited higher levels of distress than those who had not undergone the process (M = 24.431, SD = 2.478) illustrated in Figure 2.

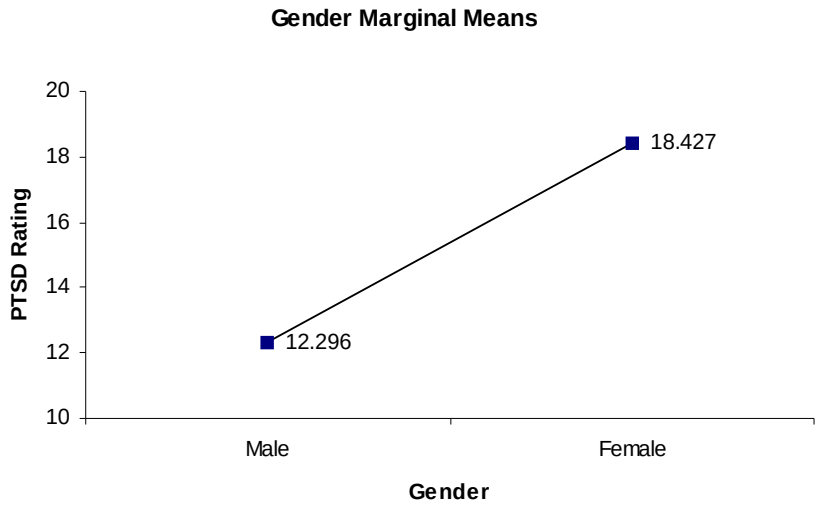

Figure 1. Marginal Means of PTSD Ratings based on Gender

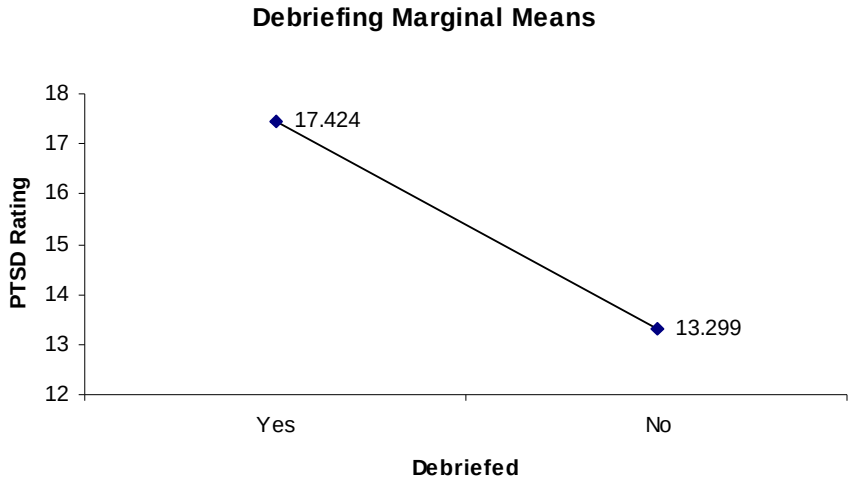

Figure 2. Marginal Means of PTSD Rating Based on Debriefing

Statistically Non-Significant Main Effects

The main effect of the level of training variable was statistically non-significant for the dependent variable of PTSD symptoms. ALS and BLS providers experience no statistical difference in PTSD symptoms with reported marginal means of 15.4 and 15.3, respectively.

Statistically Non-Significant Interaction Effects

There was not a statistically significant interaction effect for any of the independent variable combinations: Gender x Level of Training, Gender x Debriefing, Level of Training x Debriefing, and Gender x Level of Training x Debriefing.

CHAPTER 4

DISCUSSION

Several findings resulted from the statistical analyses in this study. First, gender plays a role in the amount of PTSD symptoms reported. Second, level of training (LOT) did not play a roll in the whether EMS personnel reported PTSD symptoms. Third, debriefing affected the amount of PTSD symptoms reported, in a surprising manner in that those who received debriefing actually reported higher levels of PTSD. Finally, PTSD symptoms reported by EMS personnel differed significantly from that of the general population.

Summary and Discussion of Findings

Gender Differences

This study found that women report more symptoms of PTSD than their male counterparts, which corresponds with previous research on PTSD and gender. “A greater percentage of women will develop post-traumatic stress over their lifetime--roughly 10 to 12 percent of them, as compared with 5 percent of men (Naparsteck, 2004, p. 54).” Men tend to be exposed to trauma more often than women but report fewer symptoms, and this finding is universal. Even though a person’s culture may reduce the likelihood of acquiring PTSD, studies around the globe have consistently demonstrated women to be more susceptible to PTSD than men, usually two times more likely (Naparsteck, 2004).

There are different theories regarding this gender difference. One prevailing theory in neurobiology suggests that it is a direct result of evolution (Scaer, 2001). Studies have shown that women have greater interactivity between hemispheres of the brain, which may explain their increased tendency to freeze, dissociate, and the greater likelihood of acquiring PTSD. It is believed that primitive hominid tribes were constantly at war with one another. The victors would kill all males of the defeated tribe while the women and children would become slaves or

members of the new tribe. The males who were least affected by traumatic stimuli were more likely to thrive or survive in this environment and pass these traits on to future generations. On the other hand, the females who could freeze and dissociate were more able to deal with their fearful situations and care for their children. These women then passed their survival mechanisms to the next generation.

Dissociation "is the single strongest major predictor of the eventual development of PTSD (Naparsteck, 2004, p. 76)," and women dissociate significantly more than men thus leading to higher PTSD. It is also believed that that the hormonal activity of a woman's childbearing years interacting with the body's biochemical reaction that occurs at the time of extreme an extreme stressor may play a significant role in the freeze response, dissociation, and therefore a greater likelihood of acquiring PTSD (Naparsteck, 2004).

Some speculate that the contribution of genetic experiences, hormone levels, or differences in interaction with the maternal caregiver based on gender expectations may contribute to gender-specific vulnerability of PTSD development (Scaer, 2001). A specific gender's trauma memory representations, beliefs about the self, and beliefs about the world are also believed to play roles in PTSD symptoms. Specifically, the research suggests that women tend to hold more negative beliefs about themselves and their abilities when faced with trauma. Women also tend to blame themselves more than men, and view the world as more dangerous (Kimberling, Ouimette, & Wolfe, 2002).

Gender socialization theories may help explain why women report higher levels of PTSD than men. From childhood, many male children are socialized to avoid expressing vulnerable emotions (Fivush, 1989). Studies have shown that men are raised to be independent and self-reliant, have restricted emotional expression, and to be tough and aggressive. Other studies have shown that men are taught to take risks, be calm in the face of danger, are not allowed to express

emotions or show weakness (Greenglass & Noguchi, 1996). Peers reinforce male behaviors, therefore, when men do not behave in typically masculine ways they are punished (Wester & Lyubelsky, 2005) and come to expect negative reactions from others when emotions are expressed (Jakupcak, Tull, & Roemer, 2005).

Women are socialized to be nurturing and empathetic, express emotions, and seek social support when it is needed (Gonzalez-Morales, Peiro, Rodriguez, & Greenglass, 2006). Because men are taught to withhold emotions and be less emotionally expressive than women (Japupcak, Osborne, Michael, Cook, & McFall, 2006), there is less likelihood of this group seeking help when problems arise. When men do report stress symptoms, they tend to be in the forms of expressed anger, hostility, violence, and substance abuse (Tolin & Foa, 2006), which may make a PTSD diagnosis difficult to determine.

Education

Education has often been shown to have an impact on the likelihood of developing PTSD. “For reasons that are not entirely clear, those with less education are consistently more vulnerable to PTSD than the well educated (Napersteck, p. 58).” This study revealed that level of training (LOT), which was generalized to education in this study, played no role in acquiring PTSD. The reason for this may be that the individuals with more training and education are typically the persons responding to the worst calls because they can provide the most advanced care. Worse calls at a higher frequency may mean more PTSD symptoms regardless of LOT.

Debriefing

Curiously, this study showed that EMS personnel who had received debriefing actually expressed more symptoms of PTSD. Research has shown that CISD not performed within the appropriate seven-step process has been proven ineffective (Mitchell, 2002). This study presents new finding suggesting one of three possible scenarios: first, the one-time debriefing sessions

reveals trauma symptoms that never get resolved and, therefore, worsen; second, the debriefing itself is ineffective and worsens the problem; or third, the persons involved in the debriefing process are exposed to greater traumatic incidents and, therefore, have greater PTSD symptoms that are more difficult to resolve.

PTSD Levels

Sixteen percent of EMS personnel in this study demonstrated full diagnostic criteria for PTSD according to the DSM-IV. Approximately 20% met criteria for PTSS or partial PTSD meeting two of three diagnostic criteria for PTSD. According to the DSM-IV-TR, approximately 8% of the general population suffers from PTSD; therefore, EMS personnel are two times more likely to suffer from this disorder. This finding parallels other studies on the subject. A study performed on EMS providers in Toronto revealed that 22% of the participants studied suffered from PTSD (Regehr, 2000). There are few studies regarding actual percentages of EMS workers with PTSD.

Potential Applications of the Findings

It appears that in the current study, EMS providers who are women are more likely to develop PTSD than men. EMS personnel receiving debriefing are also at higher risk for developing PTSD. Considering these findings, it may be beneficial to develop educational programs and debriefing or counseling sessions that target these vulnerable groups. There has not been enough research performed that identifies which therapies work better for women versus men PTSD sufferers (Kimberling et al., 2002). Education should begin with classes taken to become and EMS provider. EMS providers should be taught what PTSD is, warning signs to look for in themselves and other coworkers, ways to manage stress, and where to turn when symptoms arise.

It may be useful to develop debriefing sessions that are more individualized. Men and women handle stress differently; therefore, it would be useful to teach counselors how to handle these differences appropriately. Naparsteck (2004) suggests that the word “debriefing” was chosen to describe this type of intervention because it sounds masculine in male dominated fields. It is more likely for men to attend a session named debriefing versus one called therapy. If this single issue is important to how one gender group responds, then it shows how different programs need to be based on gender.

Although women are more likely to suffer from PTSD, they tend to respond to treatment as well or better than men. Among possible factors contributing to the relative superiority of treatment for women are gender role variables such as familiarity and comfort with a wider range of emotions, more experience and comfort with interpersonal intimacy, expressing anger, and the tendency to use a range of coping strategies. Men are typically socialized to be emotionally inhibited, assertive, and independent. Because most treatments emphasize expression of emotions, women tend to do better in treatment. Men may find therapy to be threatening because it is outside their normal emotional and expressive experience (Kimberling et al., 2002).

Limitations of the Current Study

There were limitations to the current study that should be noted. First, there were many more male participants than female, both of a dominantly Caucasian background. This may be a difficult obstacle to overcome considering EMS is a predominantly male field and Caucasian is the dominant race of the regions studied.

In regards to research design, there was a measurement issue noted with this study. It was very difficult to keep participants quiet during the experiment. Often they would make comments regarding survey questions or begin talking to coworkers when they were finished. This occurred regardless of the fact the researcher politely requested silence until everyone was finished. It was

noted that very few participants actually responded with more than a “zero” to some of the more personal survey questions such as those regarding sexual behaviors, drug abuse, or suicide. This is probably because of the close proximity of fellow coworkers and fear of embarrassment. This makes it difficult to determine the actual validity of the measure, as it is difficult with all self-report questionnaires. Perhaps future researchers can have participants spread out while participants are taking surveys.

Suggestions for Future Research

Sadly, there has not been a great deal of research regarding EMS personnel since 9/11. Future research should examine similar topics with greater control regarding participants. It is important to know how many EMS personnel suffer from PTSD or have early symptoms of the disorder. “CISD fails to deliver on its most ambitious promise of prevention the onset of PTSD symptoms, nor does it provide closure (Napersteck, p. 321).” Future research should look for short and long-term programs suited for the EMS population specifically. Programs need to be designed to reduce symptoms surrounding repeated trauma exposures and prevent long-term problems. Also, it is important to know how members of different agencies request debriefing and if there are policies in place that govern the debriefing process.

Future research should also involve female EMS providers because they are the most vulnerable to stress symptoms. Specifically, research should look at which therapies work better for each gender and how these therapies should be implemented. Research should also examine gender bias in the workplace, gender-role identification, and personal coping strategies in each gender. Future researchers should also develop a reliable and valid measure of PTSD specifically for EMS providers; at this time there is no measure dedicated to specifically to this group.

Conclusion

While collecting data several EMS personnel took it upon themselves to share some of their personal experiences regarding EMS experiences and debriefing. Female EMS providers often stated that it is more difficult for them to prove themselves and their abilities than it is for the men doing the same job. When women do act more assertive they gain bad reputations as "bitches." These women also report that they are considered "bitches" if they turn down sexual advances of coworkers, and they develop a reputation as "sluts" or "whores" if they do become involved with a coworker. On the other hand, the men are praised for their sexual conquests. The women in this group often find it difficult to get along with female coworkers and female nursing staff; the women spoken to could not explain these negative interactions.

Sexual harassment seems to be high among women in this group. Numerous women report that men discuss issues of a sexual nature that often make them feel uncomfortable because they are the minority. These women feel hesitant about reporting sexual harassment because they are afraid of being labeled as "bitches," not fitting in, or later being harassed in private. Several of the women spoken to reported a history of sexual abuse, and although this was not the sole reason these women went into the EMS field, most women said they have a strong desire to "save" people. Others stated that they felt a need to "nurture," or to "fix" something, while others had personal experiences that moved them toward the field of EMS.

Men commented that they find it unfair when women on the job cannot pull their own weight. Examples given were lifting heavy patients, scheduling because of childcare issues, and becoming emotional on certain calls. Men in supervisor positions reported that they are often afraid to punish the female providers because of fear of sexual harassment lawsuit. Some men and women reported difficulty working with the opposite sex on 24-hour shifts because of jealous significant others. And some reported that certain agencies they had worked for did not

allow men and women to work long shifts together. Most of the men spoken to reported going into the EMS field because of a personal past experience or because the work is “exciting.”

Most EMS providers reported that calls involving infants and children were the most stressful. And every person spoken to receiving debriefing had received debriefing regarding a pediatric patient. Those who discussed debriefing reported that debriefing sessions lasted for approximately 1 hour to 3 hours. Some reported multiple debriefings for the same call and that hospitals or management usually requested these sessions. Most of the men did not like the “touchy, feely” atmosphere and were bothered by the “how did that make you feel” questions. Men and women said they felt worse after debriefing sessions. Some said the session made them second guess themselves and feel like they missed something on the responses. Others reported extreme situations where participants either did not want to talk or situations where there were extreme emotional reactions that did not get resolved. All reported that sessions need to be individualized to the group and situation and that their needs to be a better system.

The above findings hold implications for the EMS community. It is important for EMS providers to understand PTSD and risks associated with EMS work. Those who educate this group should make a strong point of explaining the stress of EMS work, symptoms to recognize, ways of relieving stress, and where to get help when symptoms cannot be resolved. Men tend to have a more difficult time seeking psychological assistance when needed. Because EMS is a male dominated field, educators should inform EMS providers that stress is common in EMS work, so there is less shame to ask for help when it is needed.

The findings of the current study are also valuable for clinicians, as a high number of EMS personnel suffer from PTSD. Persons with his disorder often abuse drugs and alcohol, which may mask symptoms. The possibility of PTSD in this population should always be ruled out even if the person presents for other problems. It is important for any clinician to know about

vulnerable groups and how to treat them. Men and women are very different in the ways in which they express emotions; therefore, until further research can reveal which therapies work better in each gender, counselors should individualize the ways in which they conduct the therapy session. Considering the importance of EMS in everyone's daily lives, it is a field that strongly requires further study. Programs must be designed and implemented to help the helpers before there is no one there to help us.

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APPENDIX A

Demographic Questionnaire

Please answer the following questions:

Gender _____

Age _____

Marital status _____

Number of Children _____

Religion _____

Number of years involved in emergency services work _____

Do you smoke? _____

Do you drink alcohol? _____ How often? _____

Do you use illegal drugs? _____ If so, what kind? _____ How often? _____

List ways you deal with stress/hobbies (list as many as you like)_____
_____
_____
_____

Education Level (circle one): High School Graduate Associates degree Bachelors Degree Masters Degree Doctorate Degree/Medical Degree Other
_____

Have you ever received counseling? _____
If yes, why?
_____
_____

List any response that has caused you significant distress and describe. If there is no responses that have caused you distress, then leave blank.
_____
_____
_____
_____
_____

What about this call caused distress? Describe the distress you experienced.

_____
_____
_____
_____
_____

Rate the stressfulness of this particular response. 1 = not very stressful and 7 = extremely stressful.

1 2 3 4 5 6 7

Did you receive debriefing/counseling for this particular call? If yes, please describe the experience in your own words.

_____
_____
_____
_____
_____

Rate the helpfulness of this debriefing/counseling. 1 = not very helpful and 7 = extremely helpful.

1 2 3 4 5 6 7

APPENDIX B

Los Angeles Symptom Checklist
(Adult Version)

Below is a list of problems. Rate each one on a scale of 0 to 4 according to how much of a problem that item is for you. A rating of zero would mean that the item is not a problem for you; one, a slight problem; two, a moderate problem; three, a serious problem; and four, an extreme problem.

0 1 2 3 4
not a problem slight problem moderate problem serious problem extreme problem

____1. difficulty falling asleep
____2. abusive drinking
____3. severe headaches
____4. restlessness
____5. nightmares
____6. difficulty finding a job
____7. difficulty holding a job
____8. irritability
____9. pervasive disgust
____10. momentary blackouts

____11. abdominal discomfort
____12. management of money

____13. trapped in an unsatisfying job
____14. physical disabilities or medical problems. Explain:_____
____15. hostility/violence
____16. marital problems
____17. easily fatigued

____18. drug abuse
____19. inability to express feelings
____20. tension and anxiety
____21. no leisure activities
____22. suicidal thoughts
____23. vivid memories of unpleasant prior experiences

____24. excessive eating
____25. difficulty concentrating
____26. dizziness/fainting
____27. sexual problems
____28. waking during the night
____29. difficulty with memory
____30. marked self-consciousness
____31. depression
____32. inability to make and keep same sex friends
____33. inability to make and keep opposite sex friends
____34. excessive jumpiness
____35. waking early in the morning

____36. loss of weight/ appetite
____37. heart palpitations

____38. panic attacks
____39. problems with authority
____40. avoidance of activities that remind you of prior unpleasant experiences
____41. trouble trusting others
____42. loss of interest in usual activities
____43. feeling emotionally numb

How long have you been bothered by these symptoms?

_____

APPENDIX C

Participant Introduction

November 1, 2005

Dear Participant:

My name is **Ginger Woods**, and I am a graduate student at East Tennessee State University. I am working on my master's degree in **Clinical Psychology**. In order to finish my studies, I need to complete a research project. The name of my study is **Post Traumatic Stress Symptoms and Critical Incident Stress Debriefing (CISD) in Emergency Medical Services (EMS) Personnel**.

The purpose of this study is to **measure stress levels in EMS workers**. I would like to give a brief survey questionnaire to **EMS personnel working in air and ground transport units**. It should only take approximately **20 minutes** to complete. You will be asked questions about **EMS related stress and debriefing services you may have received**. Since this project deals with **uncomfortable events**, it might cause some minor stress. However, you may also feel better after you have had the opportunity to express yourselves about **things that bother you in EMS work.** This study may show **that some EMS workers experience higher or lower levels of stress than others.**

This method is completely anonymous and confidential. In other words, there will be no way to connect your name with your responses. If you do not want to fill out the survey, it will not affect you in any way. And lastly, you are free to make up your own mind about participating and quit at any time.

If you have any research-related questions, you may contact me, **Ginger Woods**, at **(276) 889-4519.** I am working on this project under the supervision of **Dr. Peggy Cantrell**; you may reach her at **(423-439-4424)**. Also, the chairperson of the Institutional Review Board at East Tennessee State University is available at **(423) 439-6055** if you have questions about your rights as a research subject. If you should experience any stress and would like to talk with someone, you may contact "Contact Concern" at 423-246-2273. Contact Concern is a non-profit crisis hotline staffed with trained mental health volunteers.

In order to ensure anonymity and confidentiality, I am asking that everyone turn in the survey to me even if you chose not to participate. If you want to participate in my study, then simply keep this letter for reference.

Sincerely,

Ginger L. Woods, B.S.

APPENDIX D

Informed Consent Form

November 1, 2005

Dear Participant:

My name is **Ginger Woods**, and I am a graduate student at East Tennessee State University. I am working on my master's degree in **Clinical Psychology**. In order to finish my studies, I need to complete a research project. The name of my study is **Post Traumatic Stress Symptoms and Critical Incident Stress Debriefing (CISD) in Emergency Medical Services (EMS) Personnel**.

The purpose of this study is to **measure stress levels in EMS workers**. I would like to give a brief survey questionnaire to **EMS personnel working in air and ground transport units**. It should only take approximately **20 minutes** to complete. You will be asked questions about **EMS related stress and debriefing services you may have received**. Since this project deals with **uncomfortable events**, it might cause some minor stress. However, you may also feel better after you have had the opportunity to express yourselves about **things that bother you in EMS work.** This study may show **that some EMS workers experience higher or lower levels of stress than others.**

This method is completely anonymous and confidential. In other words, there will be no way to connect your name with your responses. If you do not want to fill out the survey, it will not affect you in any way. And lastly, you are free to make up your own mind about participating and quit at any time.

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In order to ensure anonymity and confidentiality, I am asking that everyone turn in the survey to me even if you chose not to participate. If you want to participate in my study, then simply keep this letter for reference.

Sincerely,

Ginger L. Woods, B.S.

VITA

GINGER L. WOODS

Personal Data:	Date of Birth: June 25, 1976 Place of Birth: Abingdon, Virginia Marital Status: Single
Education:	Public Schools, Russell County, Virginia University of Virginia's College at Wise, Wise, Virginia; Psychology, B.S., 2000 East Tennessee State University, Johnson City, Tennessee; Clinical Psychology, M.A., 2007
Professional Experience:	Practicum Student, St. Mary's Hospital, Norton, Virginia, 1999-2000 Graduate Assistant, East Tennessee State University, Department of Psychology, 2002-2004 Practicum Student, Southwest Virginia Mental Health Institute, Marion, Virginia, 2004-2005
Poster Presentations:	Kennedy, A., Oldenburg, C., & Woods, G. (2000). Ethics in Teaching. Poster session presented at the annual meeting of Southeastern Psychology Association, New Orleans, LA.